

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application. Please amend claims 1, 34, 38, 47, and 51. Please cancel claims 10 and 39.

Claim 1 (Currently Amended): A composition comprising kaolin having a shape factor of at least about 20, wherein at least about [[80%]] 85% by weight of the kaolin has an esd of less than about 1 μm , and the amount of the kaolin having an esd of less than about 0.25 μm ranges from about 25% to about 60% by weight.

Claim 2 (Original): The composition according to claim 1, wherein the kaolin has a Hercules viscosity of less than about 4000 rpm at 18 dynes at 63% solids when measured using the "A" bob.

Claim 3 (Original): The composition according to claim 1, wherein the kaolin has a Hercules viscosity of less than about 2750 rpm at 18 dynes at 66% solids when measured using the "A" bob.

Claim 4 (Original): The composition according to claim 1, wherein the kaolin has a Hercules viscosity of less than about 1500 rpm at 18 dynes at 69% solids when measured using the "A" bob.

Claim 5 (Original): The composition according to claim 1, wherein at least about 94% by weight of the kaolin has an esd of less than about 2 μm .

Claim 6 (Original): The composition according to claim 1, wherein at least about 95% by weight of the kaolin has an esd of less than about 2 μm .

Claim 7 (Original): The composition according to claim 1, wherein at least about 96% by weight of the kaolin has an esd of less than about 2 μm .

Claim 8 (Original): The composition according to claim 1, wherein at least about 98% by weight of the kaolin has an esd of less than about 2 μm .

Claim 9 (Original): The composition according to claim 1, wherein the amount of the kaolin having an esd of less than about 2 μm ranges from about 94% to about 99% by weight.

Claim 10 (Canceled).

Claim 11 (Original): The composition according to claim 1, wherein at least about 88% by weight of the kaolin has an esd of less than about 1 μm .

Claim 12 (Original): The composition according to claim 1, wherein at least about 92% by weight of the kaolin has an esd of less than about 1 μm .

Claim 13 (Original): The composition according to claim 1, wherein the kaolin has a shape factor of at least about 30.

Claim 14 (Original): The composition according to claim 1 wherein the kaolin has a shape factor of at least about 40.

Claim 15 (Original): The composition according to claim 1, wherein the kaolin has a shape factor of at least about 50.

Claim 16 (Original): The composition according to claim 1, wherein the kaolin has a shape factor ranging from about 20 to about 60.

Claim 17 (Original): The composition according to claim 1, wherein the kaolin has a shape factor ranging from about 40 to about 50.

Claim 18 (Original): The composition according to claim 1, wherein the kaolin has a shape factor ranging from about 30 to about 40.

Claim 19 (Original): The composition according to claim 1, wherein the amount of the kaolin having an esd of less than about 0.25 μm ranges from about 35% to about 50% by weight.

Claim 20 (Original): The composition according to claim 1, wherein the kaolin has a shape factor ranging from about 45 to about 50, at least about 96% by weight of the kaolin has an esd of less than about 2 μm , at least about 80% by weight of the kaolin has an esd of less than about 1 μm , and the amount of the kaolin having an esd of less than about 0.25 μm ranges from about 35% to about 45% by weight.

Claim 21 (Original): A method of refining kaolin, comprising:

- (a) providing a degritted kaolin slurry comprising a sedimentary kaolin having a particle size distribution such that at least about 70% by weight of the kaolin has an esd of less than about 2 μm ;
- (b) classifying said kaolin slurry to obtain a kaolin having a shape factor of at least about 20, wherein at least about 94% by weight of the kaolin has an esd of less than about 2 μm .

Claim 22 (Original): The method according to claim 21 wherein the degritted kaolin slurry comprises a substantially stackless sedimentary kaolin.

Claim 23 (Original): The method according to claim 21, wherein the kaolin has a Hercules viscosity of less than about 4000 rpm at 18 dynes at 63% solids when measured using the "A" bob.

Claim 24 (Original): The method according to claim 21, wherein the kaolin has a Hercules viscosity of less than about 2750 rpm at 18 dynes at 66% solids when measured using the "A" bob.

Claim 25 (Original): The method according to claim 21, wherein the kaolin has a Hercules viscosity of less than about 1500 rpm at 18 dynes at 69% solids when measured using the "A" bob.

Claim 26 (Original): The method according to claim 21, wherein the amount of the classified kaolin having an esd of less than about 0.25 μm ranges from about 25% to about 60% by weight.

Claim 27 (Original): The method according to claim 21, wherein the degritted kaolin slurry provided in (a) comprises at least about 80% by weight of the kaolin having an esd of less than about 2 μm .

Claim 28 (Original): The method according to claim 21, wherein the degritted kaolin slurry provided in (a) has a shape factor of at least about 10.

Claim 29 (Original): The method according to claim 21, further comprising a wet media grinding step prior to (b).

Claim 30 (Original): The method according to claim 29, wherein the wet media grinding consumes in the range of 0 to about 35 Kw-hr/ton of energy.

Claim 31 (Original): The method according to claim 29, wherein the wet media grinding consumes in the range of about 35 to about 200 Kw-hr/ton of energy.

Claim 32 (Original): The method according to claim 21, further comprising subjecting the degritted kaolin slurry to a beneficiation step selected from: selective flocculation, ozone treatment, flotation, magnetic separation, leaching, or any combination thereof.

Claim 33 (Original): The method according to claim 21, further comprising subjecting the classified kaolin to a beneficiation step selected from: selective flocculation, ozone treatment, flotation, magnetic separation, leaching, or any combination thereof.

Claim 34 (Currently Amended): The method according to claim 21, wherein the classifying in (b) comprises removing a portion of the fines.

Claim 35 (Original): The method according to claim 21, wherein the degritted kaolin slurry provided in (a) has a shape factor of at least about 15 and at least about 80% by weight of the kaolin in the degritted kaolin slurry has an esd of less than about 2 μm .

Claim 36 (Original): The method according to claim 34, wherein after removing the portion of fines, the particle size distribution ranges from about 25% to about 60% by weight less than about 0.25 μm .

Claim 37 (Original): The method according to claim 34, wherein after removing the portion of fines, the particle size distribution is about 40% by weight less than about 0.25 μm .

Claim 38 (Currently amended): A method of refining kaolin, comprising:

- (a) providing a degritted Kaolin slurry having a shape factor of at least about 10 and including at least about 80% by weight particles having an esd of less than about 2 μm ;
- (b) wet media grinding the degritted kaolin slurry consuming in the range of from about 10 to about 200 Kw-hr/ton of energy; and
- (c) classifying the slurry to a fine fraction wherein ~~at least about 80% from about 96% to about 98%~~ by weight of the classified kaolin has an esd of ~~about, 1~~ about 2 μm .

Claim 39 (Canceled).

Claim 40 (Original): The method according to claim 38, wherein the degritted kaolin slurry provided in (a) has a shape factor of at least about 20.

Claim 41 (Original): The method according to claim 38, wherein the degritted kaolin slurry provided in (a) has a shape factor of at least about 30.

Claim 42 (Original): The method according to claim 38, wherein the degritted kaolin slurry provided in (a) has a shape factor of at least about 40.

Claim 43 (Original): The method according to claim 38 in part (c), wherein the amount of the kaolin having an esd of less than about 0.25 μm ranges from about 25% to about 60% by weight.

Claim 44 (Original): The method according to claim 38, further comprising spray-drying the fine fraction.

Claim 45 (Original): The method according to claim 38, wherein the kaolin slurry is subjected to a beneficiation step selected from: selective flocculation, ozone treatment, flotation, magnetic separation, leaching, or any combination thereof.

Claim 46 (Original): The method according to claim 38, further comprising leaching the kaolin fine fraction and filtering and drying the leached kaolin fine fraction.

Claim 47 (Currently Amended): A coated paper comprising:

a fibrous substrate; and

a coating on the substrate comprising kaolin having a shape factor of at least about 20, wherein at least about [[80%]] 85% by weight of the kaolin has an esd of less than about [[1 µm;]] 1 µm, and the amount of the kaolin having an esd of less than about 0.25 µm ranges from about 25% to about 60% by weight.

Claim 48 (Original): The paper according to claim 47, wherein at least about 94% by weight of the kaolin has an esd of less than about 2 µm.

Claim 49 (Original): The paper according to claim 47, wherein the kaolin has a Hercules viscosity of less than 4000 rpm at 18 dynes at 63% solids and less than 1500 rpm at 18 dynes at 69% solids when measured using the "A" bob.

Claim 50 (Original): The paper according to claim 47, wherein the coating further comprises calcium carbonate.

Claim 51 (Currently Amended): A method of making a coated paper comprising: coating a fibrous substrate with a paper coating composition comprising kaolin having a shape factor of at least about 20, at least [[80%]] 85% by weight of the kaolin has an esd of less than 1 µm, and the amount of the kaolin having an esd of less than about 0.25 µm ranges from about 25% to about 60% by weight.

Claim 52 (Original): The method of claim 51, wherein at least about 94% by weight of the kaolin has an esd of less than about 2 μm .

Claim 53 (Original): The method of claim 51, wherein the kaolin has a Hercules viscosity of less than 4000 rpm at 18 dynes at 63% solids and less than 1500 rpm at 18 dynes at 69% solids when measured using the "A" bob.

Claim 54 (Original): A method of making a kaolin slurry, comprising: dewatering kaolin with an evaporator, wherein the kaolin has a shape factor of at least about 50, and at least about 85% by weight of the kaolin has an esd less than about 2 μm .

Claim 55 (Original): A method of making a kaolin slurry, comprising: dewatering kaolin with an evaporator, wherein the kaolin has a shape factor of at least about 25, and at least about 85% by weight of the kaolin has an esd less than about 2 μm .